

Notice of Allowability

Application No.

09/854,673

Examiner

Harry D Wilkins, III

Applicant(s)

KIMURA ET AL.

Art Unit

1742

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to amendment filed 1 October 2004.
2. ☒ The allowed claim(s) is/are 1-5, 7-11, 13 and 16-28.
3. ☒ The drawings filed on 15 May 2001 are accepted by the Examiner.
4. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☒ All b) ☐ Some* c) ☐ None of the:
 1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____

REASONS FOR ALLOWANCE

The following is an examiner's statement of reasons for allowance: the closest prior art, Watari et al, Shibata et al and Eguchi et al teach the composition as claimed. However, none of these references teach that the steel has been spheroidized. The prior art discloses in "Annealing of Steel" that spheroidizing was a per se known step for treatment of steel, to improve machinability, but that low carbon steels (about 0.2 wt%) were not typically treated due to these steels having "gummy" results that are not able to be machined easily. While there is a suggestion on page 47 of "Annealing of Steel" that increased alloy content would remedy the problem with "gumminess", there is no direct teaching of this, and in fact in the examples of spheroidizing, all have at least 0.4 wt% carbon. Thus, one of ordinary skill in the art would not have had a reasonable expectation of successfully applying the spheroidizing to the low carbon steels of Watari et al, Shibata et al and Eguchi et al to achieve the improved machinability as claimed. It was uncertain in the prior art what the *actual* effect of the alloy content was on the "gumminess" property of low-carbon steels being spheroidized and, in fact, "Annealing of Steel" seems to teach that none of the low-carbon steels should have spheroidizing applied, even those with higher alloy contents as per Applicant's discussion filed 1 October 2004 under section "2", where it can be seen that even the high-alloy, low-carbon steels that had improved hardness were not subjected to the spheroidizing treatment. Merely teaching improved hardness due to increased alloy content does not mean that one of ordinary skill in the art would have expected the improved machinability. Applicant has also demonstrated in the Examples in the specification

(Tables 1-3) that the higher alloy contents of the present claims produce the unexpected result of improved machinability over the low-alloy content, low-carbon steels. Thus, the present claims are allowable over the prior art of record. In addition, as described by Applicant in the response under section "3", there is no guidance in the prior art to achieve the specific spheroidizing heat treatment as claimed. Also, as disclosed by Applicant in the present response, Applicant has shown and specifically stated the limitation "a relatively small amount of silicon" has been defined within the scope of 35 USC 112, such that the limitation is definite and enabled.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Harry D Wilkins, III whose telephone number is 571-272-1251. The examiner can normally be reached on M-Th 10:00am-8:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy V King can be reached on 571-272-1244. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Harry D Wilkins, III
Examiner
Art Unit 1742

hdw

ROY KING 
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700